

Desmoscolecinae from the northern part of the Moçambique Channel (Nematoda, Desmoscolecida)

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Résumé. — Sept nouvelles espèces de Desmoscolecinae du nord-est du canal de Mozambique sont décrites : *Prototricoma inaequalis* sp. nov., *P. paralongicauda* sp. nov., *Desmoscolex abyssorum* sp. nov., *D. complexus* sp. nov., *D. curvespiculatum* sp. nov., *D. macramphis* sp. nov. et *D. spinirostris* sp. nov. Des informations complémentaires sont données sur *Desmoscolex australicus* Decraemer, 1975, *D. paraleptus* Decraemer, 1975, et *D. rudolphi* Steiner, 1916. *Desmoscolex proboscis* Lorenzen, 1972, est considéré comme un synonyme nouveau de *D. max* Timm, 1970.

Abstract. — Seven new species of Desmoscolecinae from the north-east of the Moçambique Channel are described : *Prototricoma inaequalis* sp. nov., *P. paralongicauda* sp. nov., *Desmoscolex abyssorum* sp. nov., *D. complexus* sp. nov., *D. curvespiculatum* sp. nov., *D. macramphis* sp. nov. and *D. spinirostris* sp. nov. Additional information is given on *Desmoscolex australicus* Decraemer, 1975, *D. paraleptus* Decraemer, 1975, and *D. rudolphi* Steiner, 1916. *Desmoscolex proboscis* Lorenzen, 1972, is considered as a new synonym of *Desmoscolex max* Timm, 1970.

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This paper is the second in a series on the Desmoscolecida collected in the northern part of the Moçambique Channel during the 'Campagne Benthédi'. It comprises a detailed study of the Desmoscolecinae from the environment of îles Glorieuses, Banc du Geysier and Banc du Leven. Seven new species are described. *Desmoscolex proboscis* Lorenzen, 1972, is found synonymous with *Desmoscolex max* Timm, 1970.

MATERIAL AND METHODS

The desmoscolecid material from the 'Campagne Benthédi' was kindly put at my disposal by Dr. M. SEGONZAC (Centre National de Tri d'Océanographie Biologique, CENTOB, Brest, France). For information on methods see DECRAEMER (1983).

The species and their localities are listed in table 1. Samples DR08, CH90 and DR104 were rich in species; however, several species remain undescribed, some of them representing new species. This is partly due to the low number of specimens available, the poor condition of some individuals, but also to the little data known on species diversity e.g. concerning the arrangement of the somatic setae, an 'important' diagnostic character.

All type specimens and other material are deposited in the Muséum national d'Histoire naturelle, Paris (slides AN351-2, 356-7, 363-7); some paratype specimens are deposited in the nematode collection of the Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel (slides RIT34, RIT 39-40).

ABBREVIATIONS USED : L, body length ; hd, maximum head dimensions : length by width ; es, length of cephalic setae ; sd_n, length of sub-dorsal setae on main ring n ; sv_n, length of sub-ventral setae on main ring n ; sl_n, length of sub-lateral setae on main ring n ; oes, length of oesophagus ; t, tail length ; tnr, length of terminal ring ; tnrw, maximum width of terminal ring ; (tnrw), maximum width of terminal ring, desmos not included ; mbd, maximum body diameter ; (mbd), maximum body diameter foreign material or desmos not included ; spic, length of spicules measured along the median line ; gub, length of gubernaculum ; V, distance of vulva from anterior body end as percentage of total body length.

All measurements are in micrometers (μm).

TABLE I. — Location of species.

N ^o SLIDES	SAMPLE	METHOD SAMPLING	LOCATION	DEPTH (m)	DATE	SPECIES
AN 363	2	DS	W. Banc du Leven 12°35'-47°40'	1 800 to 1 750	18.III.1977	<i>Desmoscolex abyssorum</i> sp. nov. : 1 ♀
AN 359 AN 364	8	DR	W. îles Glorieuses 11°29'2"-47°18'2"	250	19.III.1977	<i>Desmoscolex</i> sp. 1 : 1 ♀ <i>D. paraleptus</i> : 1 ♂ <i>D. rudolphi</i> : 1 ♂ <i>D. minutus</i> : 1 ♀ <i>D. deconincki</i> : 1 ♀ <i>D. australicus</i> : 1 ♀ <i>D. ? dimorphus</i> : 2 ♀♀ <i>Desmoscolex</i> sp. 2 : 1 ♀ <i>Desmoscolex</i> sp. 3 : 1 ♀
AN 364	10	DS	W. îles Glorieuses 11°28'5"-47°17'7"	440	19.III.1977	<i>D. geraerti</i> : 1 ♀
	11	DS	NE Banc du Geyser 12°16'3"-46°42'2"	2 450 to 2 300	20.III.1977	<i>Desmoscolex</i> sp. 4 : 1 ♀ <i>Desmoscolex</i> sp. 5 : 1 juv. <i>Desmoscolex</i> sp. 6 : 1 juv.
AN 365, RIT 39 AN 365 AN 366	90	CH	SE îles Glorieuses 11°44'-47°30'	3 700	4.IV.1977	<i>Prototricoma inaequalis</i> sp. nov. : 1 ♂, 1 ♀ <i>P. paralongicauda</i> sp. nov. : 1 ♀ <i>Desmoscolex macramphis</i> sp. nov. : 1 ♀
AN 351 AN 352-3. 358, 367, RIT 38 AN 352						<i>D. spinirostris</i> sp. nov. : 1 ♂ <i>D. abyssorum</i> sp. nov. : 5 ♀♀ <i>D. curvespiculatum</i> sp. nov. : 1 ♂ <i>D. asetosus</i> : 3 juv. <i>D. macrophasmata</i> : 1 ♀ <i>Desmoscolex</i> sp. 7 (cf <i>D. petalodes</i>) : 1 ♂, 1 ♀, 1 juv. <i>Desmoscolex</i> sp. 8 : 1 ♂ <i>Desmoscolex</i> sp. 9 : 1 ♂, 1 juv. <i>Desmoscolex</i> sp. 10 (<i>D. dimor-</i> <i>phus-complex</i>) : 9 ♀♀, 3 ♂♂

TABLE I (suite).

N° SLIDES	SAMPLE	METHOD SAMPLING	LOCATION	DEPTH (m)	DATE	SPECIES
						10 juv.
						<i>Desmoscolex</i> sp. 11 : 1 ♀, 1 juv.
						<i>Desmoscolex</i> sp. 12 : 1 ♀
						<i>Desmoscolex</i> sp. 13 : 1 juv.
						<i>Desmoscolex</i> sp. 14 : 2 juv.
						<i>Desmoscolex</i> sp. 15 : 1 ♂
						<i>Desmoscolex</i> sp. 16 : 4 juv.
						<i>Desmoscolex</i> sp. 17 : 1 ♀
						<i>Desmoscolex</i> sp. 18 : 1 ♀
						<i>Desmoscolex</i> sp. 19 : 1 ♀
						<i>Desmoscolex</i> sp. 20 : 1 juv.
						<i>Desmoscolex</i> sp. 21 : 1 juv.
						<i>Desmoscolex</i> sp. 22 : 1 juv.
						<i>Desmoscolex</i> sp. 23 : 1 ♀
	93	DS	SW Grande Glorieuse 11°32'3-47°16'4	480 to 550	7.IV.1977	
	94	DS	SW Grande Glorieuse 11°32'2-47°16'4	450	7.IV.1977	<i>Desmoscolex</i> sp. 24 : 1 ♀
RIT 34	104	DR	N île du Lys 11°26'4-47°22'3	550 to 330		<i>D. max</i> : 1 ♀ <i>D. geraerti</i> : 5 ♂♂ <i>D. ? deconincki</i> : 1 ♂ <i>D. complexus</i> sp. nov. : 1 ♂, 2 ♀♀ <i>Desmoscolex</i> sp. 25 : 1 ♀ <i>Desmoscolex</i> sp. 26 : 1 ♂ <i>Desmoscolex</i> sp. 27 : 1 ♂, 1 ♀ <i>Desmoscolex</i> sp. 28 : 1 ♀ <i>Desmoscolex</i> sp. 29 : 1 ♂ <i>D. ? minutus</i> : 1 ♀
AN 356-7, RIT 40						
	102	DS	N île du Lys 11°24'5-47°22'7	440 to 110		<i>D. ? deconincki</i> : 1 ♀
	120	DS	SE îles Glorieuses 11°30'-47°24'7	335 to 390		
	122	DS	SE îles Glorieuses 11°32'-47°23'2	615 to 625		<i>Desmoscolex</i> sp. 30 : 1 ♂

DS : drague à sédiment « charcot », sac de jute ; tamisage 1 mm. DR : drague à roche. CH : drague à perche.

DESCRIPTIONS

Subfamily DESMOSCOLECINAE Shipley

Genus **DESMOSCOLEX** Claparède, 1863

Desmoscolex abyssorum sp. nov.

(Fig. 1)

MATERIAL : 1 ♀ holotype (slide AN367). — Paratypes : 5 ♀♀ (AN352-3, AN358, AN363, RIT 38).

MEASUREMENTS : *Holotype female* : L = 325, hd = 11 × 15, es = 12, sd₁ = 16, sd₃ = 14, sd₅ = 13, sd₇ = 13, sd₉ = 12, sd₁₁ = 13, sd₁₃ = 13, sd₁₆ = 16, sd₁₇ = 23, sv₂ = 6.5, sv₆ = 7.5, sv₈ = 8, sv₁₀ = 7.5, sv₁₂ = 8.5, sv₁₄ = 9.5, t = 49, tmr = 30, tmrw = 11, oes = 36, mbd = 40; V = 55%. — *Paratype females* (n = 3) : L = 280-330, hd = 12 × 13-15, es = 11-13, sd₁ = 15-20, sd₃ = 13-16, sd₅ = 13, sd₇ = 14, sd₉ = 12-13, sd₁₁ = 11-14, sd₁₃ = 11-15, sd₁₆ = 12-15, sd₁₇ = 17-24, sv₂ = 6.5-7, sv₆ = 6.5-11, sv₈ = 8.5, sv₁₀ = 8.5-10, sv₁₄ = 9.5-12, t = 49-51, tmr = 28-29, tmrw = 10-12, oes = 32-34, mbd = 33-47; V = 56-59%.

DESCRIPTION

Female

Body small and stout, tapered towards the extremities. Cuticle with 17 main rings, separated by large interzones with 2-5 annules. Each main ring with a desmos of secretion and fine and coarse foreign particles: each annule with a rim.

The arrangement of the somatic setae differs from the typical pattern of 17-ring species (LORENZEN, 1969) by the absence of sub-ventral setae on main ring 15: e.g. holotype ♀, sub-dorsal, right side 1 3 5 7 9 11 13 16 17 = 9; left side 1 3 5 7 9 11 13 16 17 = 9 — sub-ventral, right side 2 4 6 8 10 12 14 — = 7, left side 2 4 6 8 10 12 14 — = 7. Somatic setae slender, gradually tapered to an open tip, and without differentiation in shape between sub-dorsal and sub-ventral setae. They are inserted on peduncles surrounded by concretion and hardly protruding above the main ring. The sub-dorsal setae are longer than the sub-ventral ones; the first pair and especially the terminal pair of sub-dorsal setae are elongated compared with the other setae. The sub-ventral setae are short, becoming slightly longer posteriorly.

Head wider than long, trapezoid in side view. Cuticle thin, except at base of cephalic setae, covered with a thin layer of concretion material, except for the naked labial and amphidial region. Six minute labial papillae, only observed in holotype. Cephalic setae slender,

1. Seta broken off.

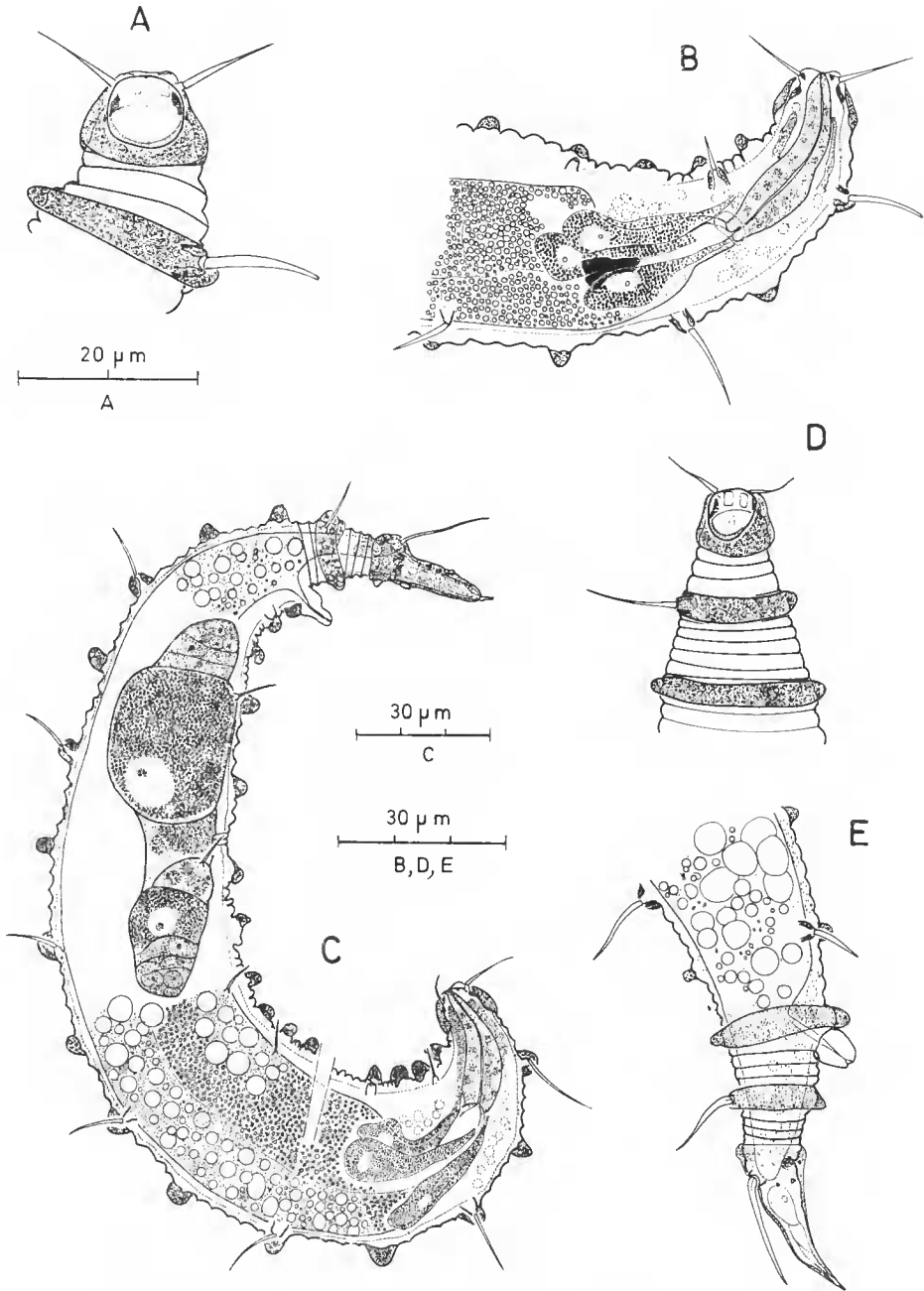


FIG. 1. — *Desmoscolex abyssorum* sp. nov. : A, surface view of head (♀ holotype) ; B, anterior body region of ♀ holotype ; C, paratype female, entire specimen ; D, anterior body region (♀ paratype) ; E, posterior body region (♀ paratype).

tapered to a pointed tip, and as long as the head. They are inserted subterminally and directly on the head-cuticle. Amphids rounded vesicles, partly covering the head in side view, extending anteriorly to the labial region. Amphidial pore in posterior half of the head.

Stoma minute. Oesophagus typical for the genus. Oesophago-intestinal junction at the level of main ring 2. Intestine with narrower granular anterior ventricular part, widening posteriorly to a broad cylinder, and largely overlapping the rectum by a blindsae reaching to the endring. Prominent anal tube protruding from the ventral body wall at the posterior border of main ring 15. Large, finely granular cells with pale nucleus and fine anterior extension flank the ventricular intestinal region.

Ocelli, $4.5 \mu\text{m}$ by $9.5 \mu\text{m}$ in holotype, are brownish pigment spots, lying between main rings 3 and 4; absent in one paratype specimen.

Reproductive system didelphic-amphidelphic, with branches outstretched. Vulva situated just posterior to main ring 10, i.e. at 55-59% of the total body length from the anterior end.

Tail with two main rings. Terminal ring, posteriorly tapered, and surrounded by a thin layer of ecretion, except for the fine tube-like spinneret, $2.5-4.5 \mu\text{m}$ long. Phasmata not observed.

Male : unknown.

TYPE LOCALITY : South-east of îles Glorieuses, Moçambique Channel, lat. $11^{\circ}44'$, long. $47^{\circ}30'$, collected at — 3 700 m depth, on 4.IV.1977.

DIAGNOSIS : *Desmoscolex abyssorum* sp. nov. is mainly characterized by a small and stout body, a trapezoid head-shape with cephalic setae inserted subterminally and directly on the head-cuticle, by a prominent, protruding anal tube, by the tail shape and by the structure and arrangement of the somatic setae.

DIFFERENTIAL DIAGNOSIS : *D. abyssorum* sp. nov. resembles *D. balticus* Lorenzen, 1971, by the trapezoid head-shape and the subterminal position of the cephalic setae, but differs from it by a different arrangement of the somatic setae without differentiation, a smaller body, the shape of the endring, a larger number of interzone annules and a prominent anal tube in female.

Desmoscolex complexus sp. nov.

(Fig. 2)

MATERIAL : 1 ♀ holotype (slide AN357). — Paratypes : 2 ♀♀ (slide AN356, RIT 40).

MEASUREMENTS : *Holotype male* : L = 240, hd = 13×15 , cs = 16, sd₁ = 17, sd₃ = 16, sd₅ = 16, sd₇ = 16, sd₉ = 16, sd₁₁ = 17, sd₁₃ = 20, sd₁₆ = 27, sd₁₇ = 31, sv₂ = 11, sv₄ = 11, sv₆ = 10, sv₈ = 9.5, sv₁₀ = 11, sv₁₂ = 12, sv₁₄ = 12, t = 36, tmr = 24, tmrw = 15, (tmrw) = 11, mbd = 31, (mbd) = 27, spic = 27, oes = 27. — *Paratypes females* (n = 2) : L = 250-260, hd = $12-15 \times 17$, cs = 18-23, sd₁ = 16-19, sd₃ = 16-17, sd₅ = 16, sd₇ = 16-17, sd₉ = 16, sd₁₁ = 16-18, sd₁₃ = 18-21, sd₁₆ = 15-17, sd₁₇ = 28-31, sv₂ = 9-10, sv₄ = 7.5-13, sv₆ = 6.5, sv₈ = 7-8, sv₁₀ = 7.5-8, sv₁₂ = 7.5-8, sv₁₄ = 10, t = 38-47, tmr = 25-32, tmrw = 17-21, (tmrw) = 13, oes = 27-29, mbd = 40-42; V = 57-66%.

DESCRIPTION

Male

Body small, only slightly tapered at both ends. Cuticle with 17 main rings with finely granular secretion and foreign material, separated by mainly wider interzones with 2-3 annules.

The arrangement of the somatic setae differs from the typical pattern of 17-ring species (LORENZEN, 1969) by the absence of a pair of sub-ventral setae on the anal main ring : sub-dorsal, right side 1 3 5 7 9 11 13 16 17 = 9 ; left side 1 3 5 7 9 11 13 16 17 = 9 — sub-ventral, right side 2 4 6 8 10 12 14 — = 7 ; left side 2 4 6 8 10 12 14 — = 7. The sub-dorsal somatic setae are stout setae, distally tapered to an open spatulate tip and inserted on peduncles, slightly protruding from the desmen. The three posteriormost pairs of sub-dorsal setae are longer than the other setae, especially those on the tail. The sub-ventral setae are shorter and slenderer setae, tapered to a pointed distal tip, and inserted on smaller peduncles. At the base of the somatic setae, a finely granular glandular cell is observed.

Head, somewhat wider than long, broadly rounded posteriorly, anteriorly tapered to a slightly rounded end. It can be divided in a small, narrower and naked anterior part and a larger, wider, covered posterior part, both marked off at the level of the insertion of the cephalic setae. Labial region with six lips (see 'en face' view, fig. 2 a) and one crown of very fine labial setae, 2.5 μm long. The cephalic setae are very complex structures, consisting each of apparently 8 feather-shaped parts, one of them with fine central canal inserts clearly directly on the head-cuticle and is visible as a 3-axes structure in transverse optical sections (fig. 2 Aa, b). Amphids, large vesicular structures, anteriorly extending to the stomatal region, posteriorly to the end of the first main ring. Amphidial pore in posterior head-region.

Digestive system typical for the genus (DECRAEMER, 1975). Oesophago-intestinal junction opposite anterior border of second main ring. Intestine with narrower anterior ventricular part, gradually widening posteriorly to a broad cylinder with small and large globular inclusions. Intestine overlapping the rectum by a large blindsae extending to the endring. Cloacal tube large, clearly protruding from the ventral body wall in main ring 15.

Reproductive system typical for the genus, i.e. with one testis (DECRAEMER, 1975). Spicules, 27 μm long, nearly straight structures, distally tapered to a pointed tip and proximally with a slightly widened capitulum. Guhernaeculum obscure, visible as a thin structure parallel to the spicules.

Tail with two main rings. Terminal ring broad anteriorly, from the insertion of the terminal pair of sub-dorsal setae, tapered posteriorly to a short naked spinneret. Small phasmata situated posteriorly to the insertion of the terminal sub-dorsal setae.

Female

In many characteristics identical with male. General habit as in male. Cuticle with 17 main rings, only the three anterior and the 3 posterior ones with complete con-

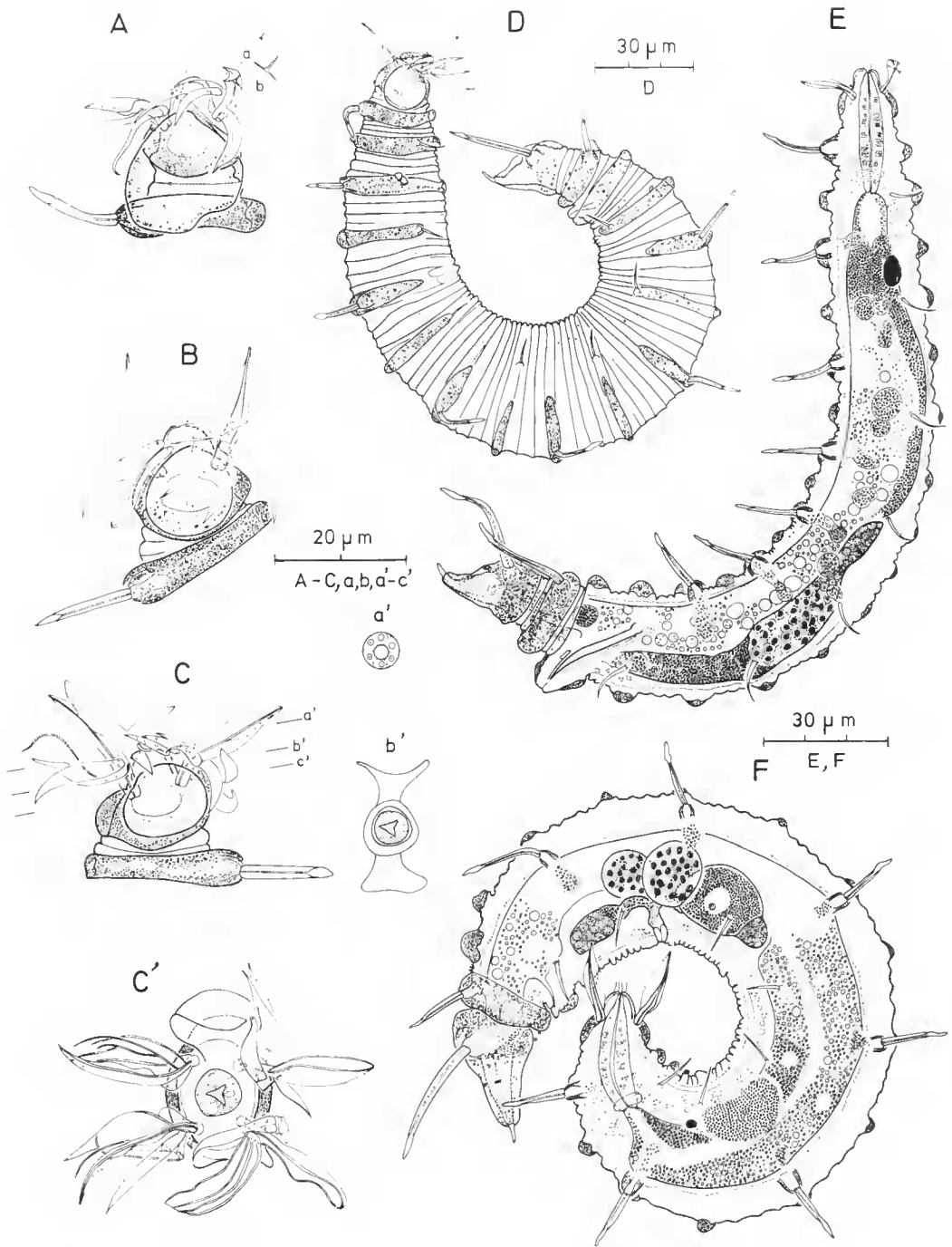


FIG. 2. -- *Desmoscolex complexus* sp. nov. : A, surface view of head (δ holotype) showing the levels at which transverse optical sections a-b were made of a cephalic seta; B, surface view of head (f paratype) ; C, surface view of head (f paratype) at which the transverse optical sections a'-c' were made; D, f paratype, entire specimen in surface view; E, δ holotype, entire specimen; F, f paratype, entire specimen.

cretion ring or desmos. The other main rings are incomplete i.e. they lack a band of secretion and foreign particles ventrally to sub-ventrally.

Somatic setae arranged as in male, with similar structure and measurements, except for the presence of non-elongated sub-dorsal setae on main ring 16, situated between the elongated pairs on main rings 13 and 17.

Reproductive system didelphic-amphidelphic, branches outstretched. Two rounded spermathecae with spermatozooids. Vulva situated just posterior to main ring 10 (at 57 % of total body length from anterior) in one female or just posterior to main ring 11 (at 66 %) in the other paratype female.

Anal tube protruding from the ventral body wall at the posterior border of main ring 15.

TYPE LOCALITY : North of ile du Lys (Mozambique Channel), lat. 11°26'4, long. 47°22'3, collected between — 330 m and — 550 m depth, on 8.IV.1977 in coral sand.

DIAGNOSIS : *Desmoscolex complexus* sp. nov. is characterized by its general habit, the arrangement of the somatic setae, the complex structure of the cephalic setae and the sexual differentiation in the structure of the main rings (complete rings in male, complete and incomplete rings in female) and the length of the sub-dorsal setae on main ring 16 (elongated in male, short in female).

DIFFERENTIAL DIAGNOSIS : *D. complexus* sp. nov. differs from all other species of the genus and of the order Desmoscolecida by the complex structure of the cephalic setae. The possession of fine labial setae at the extreme anterior head-end in *D. complexus* is uncommon and until now only observed in *Desmolorenzenia cooleni* Decraemer, 1978, and *D. montana* Decraemer & Sturhan, 1982, and *Desmoscolex spinosus* Decraemer, 1976.

***Desmoscolex curvespiculatum* sp. nov.**

(Fig. 3 A-B)

MATERIAL : 1 ♂ holotype (slide AN352).

MEASUREMENTS : *Holotype male* : L = 220, hd = 17 × 13, cs = 13, sd₁ = 19, sd₃ = 18, sd₅ = 15, sd₇ = 16, sd₉ = 15, sd₁₁ = 16, sd₁₆ = 18, sd₁₇ = 30, sv₂ = 8, sv₆ = 10, sv₁₃ = 8, t = 57, tnr = 31, tnrw = 11, (tnrw) = 8.5, mbd = 30, (mbd) = 23, spic = 39.

DESCRIPTION

Male

Body short and slender, tapered at both ends. Cuticle with 17 main rings ; on the left side an additional partial ring is present laterodorsally between main rings 12-13 (not figured). The main rings, with secretion and fine concretion particles, are separated by narrower (anterior region and tail) or wider interzones with 2 to 4 annules. These annules are provided with a transverse row of numerous minute spines, except in first interzone and on the tail ; some fine particles may be caught between them.

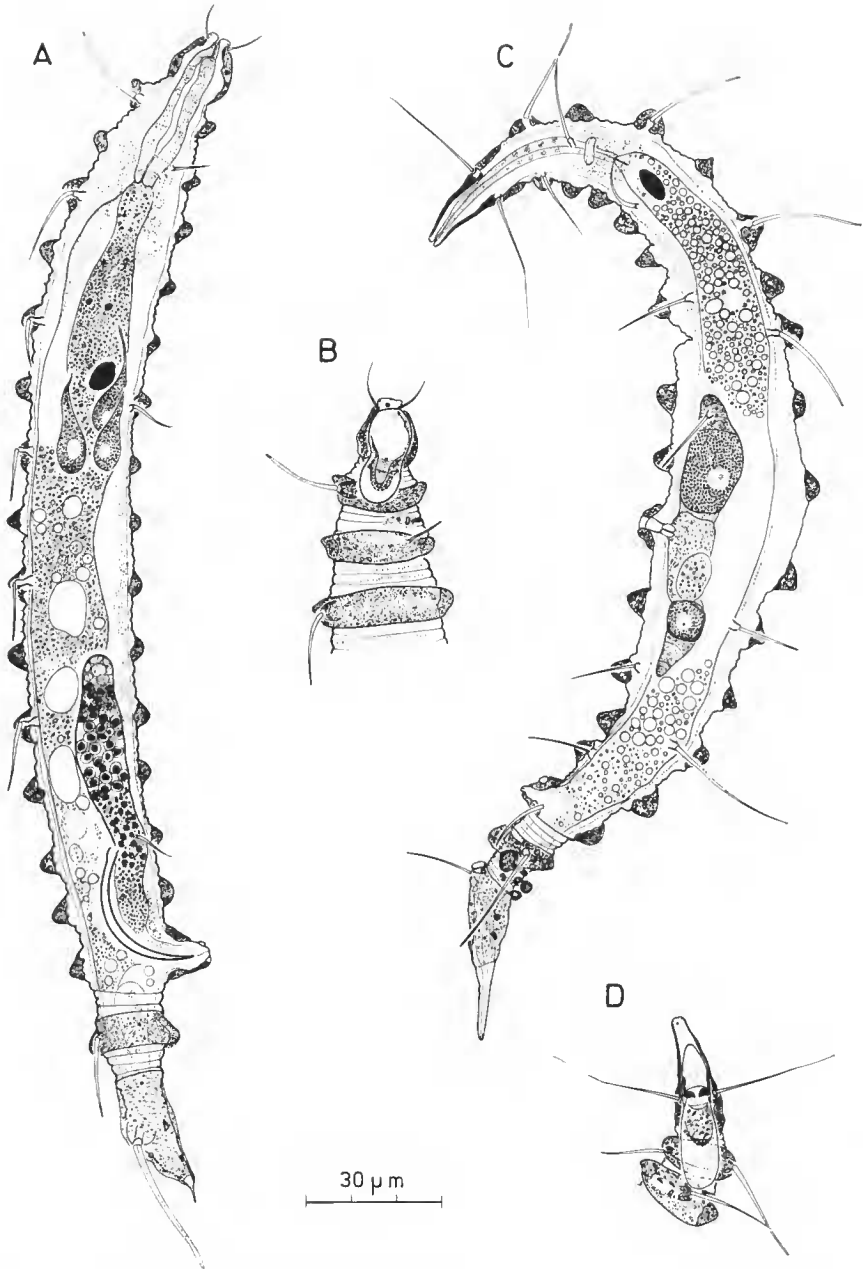


FIG. 3. — *Desmoscolex curvespiculatum* sp. nov. : A, ♂ holotype, entire specimen ; B, anterior body region in surface view (♂ holotype). — *Desmoscolex max* Timm, 1970 ; C, entire female specimen ; D, surface view of head (female).

Somatic setae arranged as follows : sub-dorsal, right side 1 3 5 7 9 11 13¹ 16 17 = 9 ; left side 1 3 5 7 9 — 13 17 18 = 8 — sub-ventral, right side 2 — 6 — — 13 — — = 3 ; left side 2 — 6 — — 12 — — = 3. They are fine setae, distally tapered and without differentiation (except terminal pair) between sub-dorsal and sub-ventral setae ; they are inserted on low peduncles. The sub-ventral setae are short. The sub-dorsal setae on main rings 1, 3, 16 and especially on main 17 are longer than the other setae.

Head longer than wide, with naked marked off labial region ; its cuticle covered with secretion and fine foreign material. Laterally, the head shows a short prolongation, following the amphids. Cephalic setae fine, inserted subterminally and directly on the head-cuticle. Almost at the same level a crown of six minute labial sensorial organs (papillae) is observed. Amphids large bipartite structures, anteriorly reaching the level of the cephalic setae and posteriorly extending beyond the head-border to halfway the first main ring. Amphidial pore in posterior head-region.

Stoma shallow. Oesophagus and intestine typical for the genus. Oesophago-intestinal junction at the end of the second main ring. Intestine overlapping the rectum posteriorly. Three finely granular cells with pale nucleus were observed on both sides, just behind the ocelli. Cloacal tube prominent, protruding from the ventral body wall in main ring 15. Ocelli rounded brownish pigment spots, $6 \times 4.5 \mu\text{m}$ diameter on the right side and situated between main rings 5 and 6 or at the level of main ring 5 (left body side).

Reproductive system with one testis, typical for the genus. Spicules, $39 \mu\text{m}$ long, strongly arcuate, with hardly marked capitulum.

Tail with two main rings. Terminal ring, except for fine naked spinneret ($4 \mu\text{m}$ long), completely surrounded by concretion. No phasmata observed.

Female : unknown.

TYPE LOCALITY : South-east of îles Glorieuses, Moçambique Channel, lat. $11^{\circ}44'$, long. $47^{\circ}30'$, collected at — 3 700 m depth, on 4.IV.1977.

DIAGNOSIS : *Desmoscolex curvespiculatum* sp. nov. is characterized by its head-shape with subterminally inserted cephalic setae, by the number and arrangement of the somatic setae (9 pairs of sub-dorsal and 3 pairs of sub-ventral setae) and by the length and shape of the spicules.

DIFFERENTIAL DIAGNOSIS : *D. curvespiculatum* differs from all other species by the number and arrangement of the somatic setae with only three pairs of sub-ventral setae. It can be compared with *D. quadricomoides* Timm, 1970, in having strongly arcuate spicules.

***Desmoscolex macramphis* sp. nov.**

(Fig. 4 A-B)

MATERIAL : 1 ♀ holotype (slide AN366).

MEASUREMENTS : *Holotype female* : L = 270, hd = 12×11 , cs = 17, sd₁ = 20, sd₃ = 20, sd₅ = 20, sd₇ = 21, sd₉ = 21, sd₁₁ = 18, sd₁₃ = 22, sd₁₆ = 24, sd₁₇ = 38, sv₂ = 17, sv₄ = 18, sv₆ = 22, sv₈ = 19, sv₁₂ = 20, oes = 38, t = 54, tmr = 40, tmrw = 8.5, mbd = 33 ; V = 59 %.

1. Seta broken off.

DESCRIPTION

Female

Body small and slender, tapered at both ends. Cuticle with 17 main rings, separated from each other by a mainly wider interzone with 2-3 annules, sometimes covered with fine foreign material. Each main ring with secretion and finely granular concretion material.

Somatic setae arranged as follows : sub-dorsal, right side 1 3 5 7 9 11 13 16 17 = 9 ; left side 1 3 5 7 9 11 13 16 17 = 9 — sub-ventral, right side 2 4 6 8 — 12 — — = 5 ; left side 2 4 6 8 — 12 — — = 5. Somatic setae without differentiation in structure. They are fine setae ending in an open tip and inserted on relatively high peduncles with naked distal part, protruding from the concretion rings. Somatic setae nearly equally long, slightly longer posteriorly ; terminal pair of sub-dorsal setae on main ring 17 obviously elongated, nearly twice as long as the other setae.

Head as long as wide, slightly anteriorly tapered to a truncate end. Its cuticle thickened and sclerotized in naked narrower anterior part (i.e. anterior to insertion of cephalic setae) and covered with finely granular concretion in posterior region. Cephalic setae, 17 μ m long, fine, inserted on relatively high peduncles about halfway along the length of the head. Amphids extraordinary elongated vesicular structures, reaching to the anterior border of the 4th main ring. Amphidial pore situated shortly behind the insertion of the cephalic setae.

Stoma small, with reinforced wall. Oesophagus typical desmoseolecoid, surrounded by the nerve ring at the interzone between main rings 2 and 3. Oesophago-intestinal junction at the anterior end of the 3rd main ring. Front of intestine with narrow granular ventricular part, widening behind into a broad cylinder with small and large globules ; intestine largely overlapping the rectum posteriorly. Anal tube at the posterior end of main ring 15.

Ocelli elongated ochreously pigmented structures, situated between main rings 5 and 6.

Reproductive system didelphic-amphidelphic with two spermathecae filled with relatively large spermatozooids. Vulva at the posterior end of main ring 10.

Tail with two main rings. Terminal ring, 40 μ m long, almost completely devoided of foreign material, cylindrical in shape to the insertion of the sub-dorsal setae and ending on a shorter, slightly tapered endpart with small rounded phasmata.

Male : unknown.

TYPE LOCALITY : South-east from îles Glorieuses, lat. 11°44', long. 47°30', collected at — 3 700 m depth, on 4.IV.1977.

DIAGNOSIS : *Desmoscolex macramphis* sp. nov. is characterized by the number and arrangement of the somatic setae (5 pairs of sub-ventral and 9 pairs of sub-dorsal setae), by the fine somatic setae without structural differentiation, by the extremely long amphids, and by the shape of the endring with obviously elongated setae.

DIFFERENTIAL DIAGNOSIS : *D. macramphis* resembles *D. longiamphis* Timm, 1970, by its long amphids and by its habitat (deep-sea). It differs from *D. longiamphis* by its short

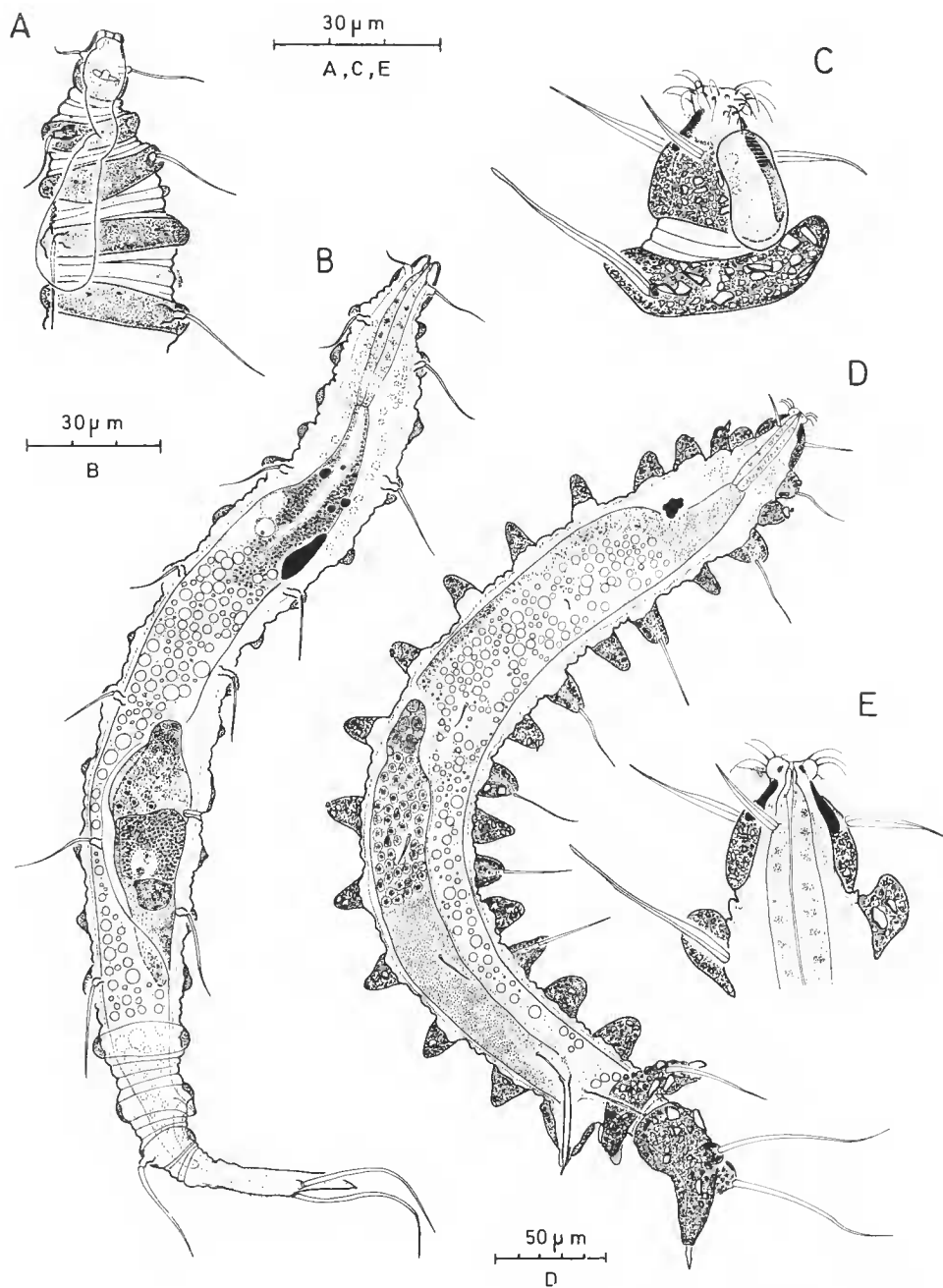


FIG. 4. — *Desmoscolex macramphis* sp. nov. : A, ♀ holotype, surface view of anterior body region ; B, ♀ holotype, entire specimen. — *Desmoscolex spinirostris* sp. nov. : C, surface view of head (♂ holotype) ; D, ♂ holotype, entire body ; E, head region (♂ holotype).

body (270 μm against 635 μm in *D. longiamphis*), by the number and arrangement of somatic setae (typical desmoscoleoid pattern in *D. longiamphis*), by the setae measurements and by the shape of the endring. *D. macramphis* resembles *D. longisetosus* Timm, 1970, in the number of the somatic setae with only 5 pairs of sub-ventral setae. It differs from *D. longisetosus* in general habit, head-shape, shape of the amphids and shape of the endring. A setal pattern without differentiation in structure of the setae was also observed in *D. spinirostris* sp. nov.

***Desmoscolex spinirostris* sp. nov.**

(Fig. 4 C-E)

MATERIAL : 1 ♂ holotype (slide AN351).

MEASUREMENTS : *Holotype male* : L = 530, hd = 23 \times 28, cs = 23, sd₁ = 39, sd₃ = 31, sd₅ = 29, sd₇ = 29, sd₉ = 31, sd₁₁ = 34, sd₁₃ = 35, sd₁₆ = 52, sd₁₇ = 81, sv₆ = 19, sd₁₄ = 21, sv₁₅ = 36, spic = 44, gub = 19, t = 112, tmr = 81, tmrw = 35, (tmrw) = 19, oes = 50, mbd = 86, (mbd) = 52.

DESCRIPTION

Male

Body relatively large and stout, tapered at both ends. Cuticle with 17 main rings, separated from each other by broader or equally broad interzones usually formed by 2 to 3 annules ; the anteriormost and the posterior interzones are very narrow. Each main ring with fine and coarse concretion particles.

Somatic setae arranged according to the typical pattern of 17-ring species : sub-dorsal, right side 1 3 5 7 9 11 13 16 17 = 9 ; left side 1 3 5 7 9 11 13 16 17 = 9 — sub-ventral, right side 2 4 6 8 10 12 14 15 = 8 ; left side 2¹ 4¹ 6 8 10 12 14 15 = 8. Somatic setae slender, distally tapered to a fine open tip. No differentiation in shape between sub-dorsal and sub-ventral setae, except for the terminal pair of sub-dorsal setae showing a knicked distal part. The sub-ventral setae are shorter and finer than the sub-dorsal ones.

Head about triangular in side view, anteriorly with a widened offset hairy stomatal region. This offset anterior region with naked non-sclerotized cuticle possesses 5.5 μm to 8.5 μm long hairy spines, almost arranged in three crowns. Posterior to this region the head-cuticle is thickened and sclerotized anteriorly ; from the level of the insertion of the cephalic setae the cuticle is covered with concretion. No labial setae observed. Cephalic setae as long as the head-width, inserted directly on the head-cuticle about halfway along the length of the head. Amphids, large vesicular structures reaching posteriorly to the head-border and anteriorly to beyond the insertion of the cephalic setae.

Stoma short, narrow, offset. Oesophagus typical desmoscoleoid. Oesophago-intestinal junction at posterior end of main ring 2. Front of intestine with narrower ventricular part, widening behind into a broad cylinder filled with small and large globules ; intestine overlapping the rectum posteriorly.

Reproductive system typical, with a single testis (DECRAEMER, 1975). Spicules, 44 μm

1. Setae broken off.

long, stout structures with slightly offset capitulum and pointed distal tip. Gubernaculum, a thin rod-like structure parallel to the spicules. Cloacal tube clearly protruding from the ventral body wall in main ring 15.

Tail with two main rings. Large terminal ring, 81 μm long, consisting of a broad cylindrical anterior part extending to the peduncles of insertion of the terminal sub-dorsal setae and a tapering posterior part ventrally bent and ending on a 11 μm long spinneret. Cuticle of endring except for spinneret, completely covered with concretion material.

Female : not found.

TYPE LOCALITY : South-east from îles Glorieuses, lat. 11°44', long. 47°30', collected at — 3 700 m depth, on 4.IV.1977.

DIAGNOSIS : *Desmoscolex spinirostris* sp. nov. is characterized by its head-shape with a hairy offset anterior part, by the slender somatic setae without differentiation in shape between sub-dorsal and sub-ventral setae.

DIFFERENTIAL DIAGNOSIS : *D. spinirostris* sp. nov. is closely related to *Desmoscolex spinosus* Deeraemer, 1976, in possessing a hairy offset anterior head-region, a typical arrangement of the somatic setae, a comparable shape of the copulatory apparatus and of the endring. *D. spinirostris* differs from *D. spinosus* in measurements : body length about twice the length of *D. spinosus*, longer somatic setae and longer spicules ; in head-shape with long hairy spines instead of short in *D. spinosus* ; by the absence of 6 setiform labial papillae, present in *D. spinosus* and by the structure of the somatic setae i.e. without differentiation in *D. spinirostris*.

***Desmoscolex australicus* Deeraemer, 1975**

(Fig. 5 A-B)

For the first time a female specimen of *D. australicus* is found. The species was described on a single male specimen (DECRAEMER, 1975 : 243) and never rediscovered until now.

MATERIAL : 1 ♀ (slide AN 364).

MEASUREMENTS : *Female* (n = 1) : L = 225, hd = 11 × 13, cs = 16, sd₁ = 13, sd₃ = 11, sd₅ = 10, sd₇ = 10, sd₉ = 10, sd₁₁ = 11, sd₁₃ = 13, sd₁₆ = 11, sd₁₇ = 18, sv₂ = 7.5, sv₄ = 7.5, sv₆ = 6.5, sv₈ = 8.5, sv₁₀ = 9, sv₁₄ = 10, sv₁₅ = 10, t = 28, tmr = 26, tmrw = 10, (tmrw) = 7.5, ocs = 22, mbd = 33, (mbd) = 27 ; V = 64 %.

DESCRIPTION

Female

In most characters identical with the holotype male. The sub-dorsal somatic setae on main rings 1 and 3 and especially the terminal pair are longer than the other sub-dorsal setae. The rounded amphids are smaller than in the male, only extending posteriorly to the border of a naked region demarcated from the surrounding covered head-cuticle.

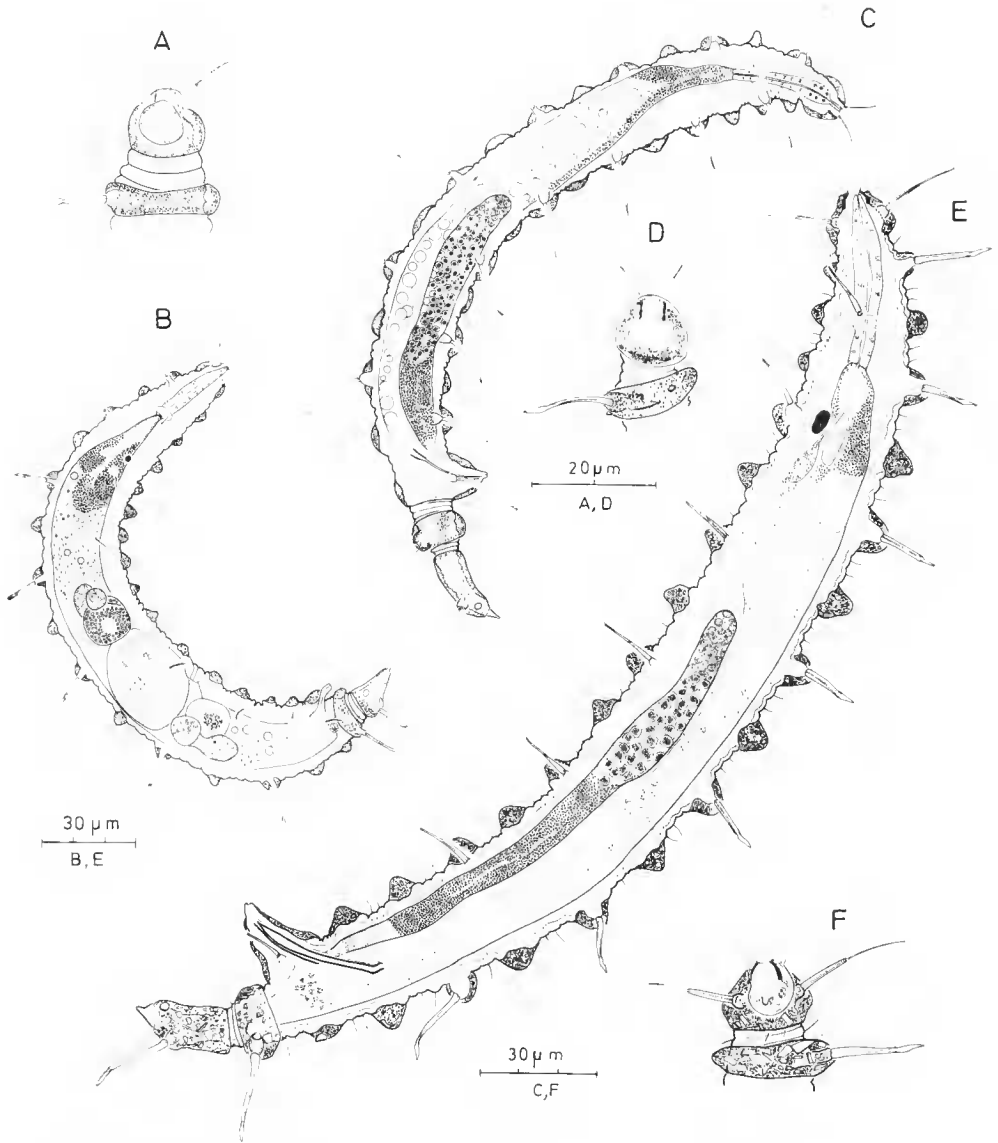


FIG. 5. — *Desmoscolex australicus* Decraemer, 1975 : A, surface view of head (female) ; B, entire female specimen. — *Desmoscolex paraleptus* Decraemer, 1975 : C, entire male specimen ; D, head region in surface view (male). — *Desmoscolex rudolphi* Steiner, 1916 : E, entire male specimen ; F, surface view of head (male).

Reproductive system didelphic-amphidelphic, with outstretched branches. Spermathecae present. Vulva situated in the interzone between main rings 9 and 10 i.e. at 64 % of the total body length from anterior. Tail with two main rings. Terminal ring ending on a 2.5 μm long naked spinneret.

LOCALITY : West of files Gloricuses, lat. 11°29'2, long. 47°18'2, collected at — 250 m depth, on 19.III.1977.

Desmoscolex max Timm, 1970
(Fig. 3 C-D)

The female specimen from the Moçambique Channel is compared with the type specimens (TIMM, 1970 : 26-27) and other specimens of *D. max*, respectively from a coral and shell beach, Galapagos Islands, Ecuador and from Antaretica (Scott Base, — 535 m depth ; Hut Point, — 457 m depth) and with type specimens of *Desmoscolex proboscis* Lorenzen, 1972, from a sandy beach at Sylt, Denmark.

MATERIAL : 1 ♀ (slide RIT34).

MEASUREMENTS : *Female* (n = 1) : L = 275, hd = 26 \times 12, cs = 32, sd₁ = 24, sd₃ = 22, sd₅ = 21, sd₇ = 22, sd₉ = 21, sd₁₁ = 23, sd₁₃ = 30, sd₁₆ = 32 ; sv₁ = 16, sv₄ = 14, sv₈ = 15, sv₁₂ = 14, sd₁₄ = 15, sv₁₅ = 17, sv₁₇ = 17, oes = 52, t = 57, tnr = 37, tnrw = 11, (tnrw) = 7.5.

DISCUSSION

The female specimen from the Moçambique Channel largely agrees with *D. max* and *D. proboscis* ; only a few variations were observed :

— the arrangement of the somatic setae in the female : sub-dorsal, right side 1 3 5 7 9 11 13 16 = 8 ; left side 1 3 5 7 9¹ 11 13 16 = 8 — sub-ventral, right side 1 2 4 6 8 — 12 14 15 17 = 9 ; left 1 2¹ 4 6 8 — 12 14 15 17 = 9, differs from *D. max* in the absence of sub-ventral setae on main ring 10 and from *D. proboscis* in the presence of sub-ventral setae on main ring 15 ;

— the head is obviously elongated i.e. twice as long as wide, instead of equally long and wide as in the type specimens of both other species ;

— the hairy cephalic setae are longer : 32 μm against 22 μm in *D. max* (holotype female) and 24 μm in *D. proboscis* (paratype female) ;

— the bipartite amphids are somewhat longer, extending to the anterior end of main ring 2 instead of main ring 1 in both other species ;

— the terminal ring ends on a longer naked fine spinneret ;

— the sub-dorsal setae on main rings 13 and 16 are elongated as in *D. max*, but differ from *D. proboscis* with only the setae on main ring 16 elongated ;

1. Setae broken off.

— the differentiation in structure (not in measurements) between the sub-dorsal and sub-ventral setae is more distinct in both species compared with, than in the female from the Moçambique Channel.

D. max and *D. proboscis* are closely related species, only distinguished from each other by a difference in the arrangement of the somatic setae (without sub-ventral setae on main rings 10 and 15 in *D. proboscis*, present in *D. max*) and by the length of the spicules (39 μm in *D. max* (types), 35-43 μm in specimens from Antarctica against 25-27 μm in *D. proboscis*). The difference in position of the terminal pair of somatic setae (see LORENZEN, 1972 : 315 ; and TIMM, 1970, fig. 28 of a female) i.e. sd_{17} in sub-dorsal position is not valid. A photograph of a female specimen (TIMM, 1970, plate 2 fig. 14), a redescription of *D. max* in TIMM (1978) and a study of the type specimens of *D. max* shows the terminal pair of somatic setae in sub-ventral position as in *D. proboscis*.

CONCLUSION : *D. max*, *D. proboscis* and the female specimen from the Moçambique Channel closely resemble each other. Their mutual distinction lies in the number of sub-ventral somatic setae : 10 (*D. max*), 9 (female found), 8 (*D. proboscis*). However, they can be distinguished from all other species of the genus by the arrangement of the somatic setae i.e. with a pair of sub-ventral setae on main rings 1 and 17.

Taking into account the special arrangement of the sub-ventral somatic setae, the similar general habit with elongated head-shape and bipartite amphids, they all belong to the same species. Consequently I consider *D. proboscis* synonymous with *D. max*. TIMM (1978) considered this synonymy as probable.

Desmoscolex paraleptus Decraemer, 1975

(Fig. 5 C-D)

For the first time since its description on a female specimen (DECRAEMER, 1975 : 281-283) this species is rediscovered by a male specimen, unknown until now.

MATERIAL : 1 ♀ (slide AN359).

MEASUREMENTS : *Male* ($n = 1$) : L = 225, hd = 11×12 , cs = 9, $\text{sd}_1 = 17$, $\text{sd}_3 = 16$, $\text{sd}_5 = 14$, $\text{sd}_7 = 16$, $\text{sd}_9 = 16$, $\text{sd}_{11} = 17$, $\text{sd}_{13} = 17$, $\text{sd}_{16} = 27$, $\text{sd}_{17} = 30$, $\text{sv}_2 = 13$, $\text{sv}_4 = 13$, $\text{sv}_6 = 14$, $\text{sv}_8 = 15$, $\text{sv}_{10} = 15$, $\text{sv}_{12} = 15$, $\text{sv}_{14} = 15$, $\text{sv}_{15} = 18$, oes = 29, t = 39, tmr = 22, tmrw = 8.5, (tmrw) = 6, mbd = 26, (mbd) = 20, spic = 19, gub = 8.

DESCRIPTION

Male

In most characters identical with female. Body small and slender with 17 broad main rings, resembling the larger female holotype in habit. The arrangement of the somatic setae is typical (LORENZEN, 1969) and they are structured as in female. The sub-dorsal setae on the tail (sd_{16} , sd_{17}) are obviously longer than the other setae ; the terminal pair of sub-ventral setae is longer than the other sub-ventral setae.

Reproductive system typical for the genus, i.e. with one testis. Spicules, 19 μm long, slender, slightly arched structures with widened proximal end. Gubernaculum, 8 μm long, visible as a fine bar along the distal end of the spicules, when retracted.

Tail with two main rings. Endring, except for spinneret, completely surrounded by desinos. It consists of a long almost cylindrical anterior part to the level of the somatic setae (at 2/3rd of its length) and a shorter slightly ventrally bent posterior part (with large round phasmata), ending on a 3.5 μm long, naked spinneret.

REMARK : The male specimen shows some minor differences with the holotype female : a smaller body length (225 μm against 345 μm in the female), both pairs of sub-dorsal setae on the tail are elongated instead of only the terminal pair as in female, the terminal pair of sub-ventral setae is longer than the other sub-ventral setae instead of equally long as in female, and the spinneret is shorter instead of an elongated tube as in female.

DIFFERENTIAL DIAGNOSIS (emended) : *D. paraleptus* differs from *D. leptus* Steiner, 1916 (see DECRAEMER, 1975 : 274-278), by the arrangement of the somatic setae (typical in *D. paraleptus* and without sv_{14} in *D. leptus*), by the absence of hairy spines on the anterior and posterior border of the main rings and by possessing less spines on the annules of the interzones, and by the structure of the cephalic setae (without wider base as in *D. leptus*).

LOCALITY : West of îles Glorieuses, lat. 14°29'2, long. 47°48'2, collected at — 250 m depth, on 19.III.1977.

***Desmoscolex rudolphi* Steiner, 1916**

(Fig. 5 E-F)

For the first time since its original description based on two males (STEINER, 1916 : 326-328) and redescribed by TIMM (1970), *D. rudolphi* is rediscovered by a male specimen. Females remain unknown.

MATERIAL : 1 ♂ (slide AN364).

MEASUREMENTS : *Male* (n = 1) : L = 395, hd = 18 × 24, cs = 29, $\text{sd}_1 = 26$, $\text{sd}_3 = 23$, $\text{sd}_5 = 23$, $\text{sd}_7 = 23$, $\text{sd}_9 = 23$, $\text{sd}_{11} = 25$, $\text{sd}_{13} = 28$, $\text{sd}_{16} = 35$, $\text{sd}_{17} = 35$, $\text{sv}_2 = 23$, $\text{sv}_4 = 20$, $\text{sv}_6 = 20$, $\text{sv}_8 = 21$, $\text{sv}_{10} = 20$, $\text{sv}_{12} = 21$, $\text{sv}_{15} = 17$, t = 57, tmr = 31, tmrw = 15, (tmrw) = 10, mbd = 59, (mbd) = 44, oes = 44, spic = 48, gub = 27.

DESCRIPTION

Male

Fits the original description in most characters. Body cuticle with 17 main rings with coarse foreign material, are separated by smaller to equally broad interzones with mainly two annules ; each annule with a transverse row of 4.5-6 μm long fine spines (not described in type specimens, nor observed in male lectotype).

Arrangement of the somatic setae as in type specimens i.e. differentiated from the typical pattern of 17-ring species by the absence of sub-ventral setae on main ring 14.

The first pair of sub-dorsal setae and the setae on main ring 13 are somewhat longer than the other setae, the sub-dorsal setae on the tail are clearly elongated. The first pair of sub-ventral setae is laterally shifted and slightly longer than the other sub-ventral setae.

Head as in type specimens. Cephalic setae, 29 μm long, jointed.

Stoma minute. Digestive system typical for the genus. Oesophago-intestinal junction at the anterior end of main ring 3. Intestine with short postrectal blindsac. Cloacal tube prominent, protruding from the ventral body wall in main ring 15. Ocelli, $5.5 \times 8 \mu\text{m}$ on the left side, situated at the level of main ring 4.

Reproductive system typical for the genus i.e. with one testis. Spicules, 48 μm long, nearly straight structures with offset capitulum; Gubernaculum, 27 μm long and parallel to the spicules.

Tail with two main rings as in the type specimens.

Female : unknown.

REMARK : The specimen found differs from the type specimens only in the longer cephalic setae (29 μm against 20 μm in type specimens), the longer spicules (48 μm against 36 μm in lectotype) and in the presence of short hairy spines on the annules of the interzones.

DISCUSSION : *D. rudolphi* (only males known) is closely related to *D. laevis* Kreis, 1928. It only differs from it by the arrangement of the somatic setae i.e. with a pair of sub-ventral setae on main ring 10, absent in *D. laevis*. Since, unfortunately, *D. rudolphi* is only known by a few specimens, only males, we have no data on the variability of the diagnostic features; it might be possible that *D. rudolphi* and *D. laevis* represent a single species.

Genus **PROTOTRICOMA** Timm, 1970

Prototricoma inaequalis sp. nov.

(Fig. 6)

MATERIAL : 1 ♂ holotype (slide AN365). — 1 ♀ paratype (slide RIT39).

MEASUREMENTS : *Holotype male* : L = 390, hd = 13×12 , cs = 24-25 (sub-dorsal), 15-16 (sub-ventral), sd₆ = 41, sd₁₅ = 37, sd₂₆ = 30, sd₃₉ = 28, sd₄₉ = 30, sd₆₂ = 31, sd₇₆ = 31, sd₈₆ = 44, sd₉₇ = 51, sv₂₃ = 7, sv₃₁ = 8.5, sv₇₇ = 8, sv₈₆ = 11, t = 72, tmr = 28, oes = 29, mbd = 30, spic (right) = 18, spic (left) = 15. — *Paratype female* (n = 1) : L = 360, hd = 11×13 , cs = 20-23 (sub-dorsal), 12-13 (sub-ventral), sd₆ = 32, sd₁₄ = 30, sd₂₆ = 25, sd₃₁ = 25, sd₄₂ = 25, sd₅₃ = 25, sd₆₅ = 28, sd₇₈ = 38, sd₈₆ = 44, sv₂₅ = 6.5, sv₆₈ = 7.5, mbd = 28, t = 67, tmr = 27, V = 56 %

DESCRIPTION

Body slender, tapered towards both ends. Cuticle with 97-100 (♂) and 86-88 (♀) narrow homogeneous annules. Each annule with a transverse row of minute tubes.

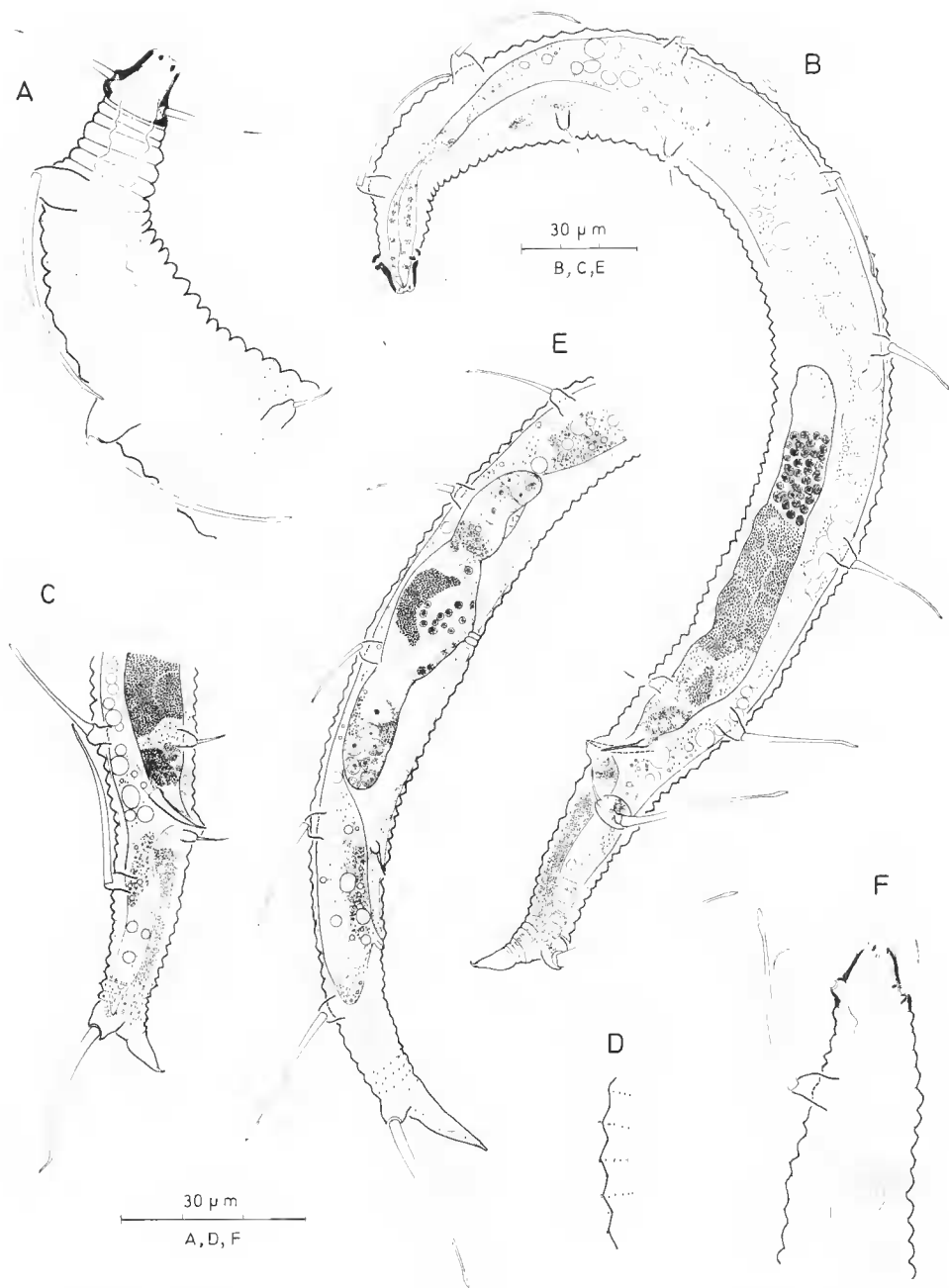


FIG. 6. — *Prototricoma inaequalis* sp. nov. : A, surface view of anterior body region (σ holotype) ; B, antire body of σ holotype (left side) ; C, posterior body region of σ holotype (right side) ; D, dorsal part of the body cuticle between the second and third sub-dorsal seta (holotype) ; F, surface view of anterior body region (σ paratype) ; E, female reproductive system and tail, partly in surface view (paratype).

The somatic setae are inserted on high protruding peduncles. The sub-dorsal setae are long fine setae, slightly distally tapered to a narrow spatulate end; the sub-ventral setae are short, tapered to a pointed tip, and about equally long. The two anteriormost sub-dorsal setae and both pairs on the tail are longer than the other setae.

Head more or less triangular in side view, slightly tapered to a broadly truncated anterior border. Its naked cuticle is slightly thickened and sclerotized especially just in front of the insertion of the cephalic setae. Two sclerotized dots are observed in the stomatal region, probably due to interruptions in the thickened cuticle. Cephalic setae inserted on protruding peduncles in posterior head region. They are unequal in length with the sub-dorsal cephalic setae being longer than the sub-ventrally inserted setae i.e. 24-25 μm (σ), 20-23 μm (φ) against 15-16 μm (σ), 12-13 μm (φ). The sub-dorsally inserted setae are relatively stout, the sub-ventral cephalic setae are finer, both are distally tapered to a pointed tip (fig. 6 B). Amphids obviously long vesicular structures, anteriorly almost reaching to the stomatal region and posteriorly extending onto annule 19 (σ), 17 (φ). Amphidial pore at the level of the cephalic setae.

Stoma shallow. Oesophagus short cylindrical, with narrower end-part surrounded by the nerve ring. Intestine with narrow finely granular ventricular region, gradually widening posteriorly into a broad cylinder with small and globular inclusions. Intestine largely overlapping the rectum in male by a long blindsac extending to the insertion of the terminal pair of sub-dorsal setae; with short blindsac in female.

No ocelli observed.

Tail tapering posteriorly, ending on a smooth or largely smooth, ventrally orientated terminal part with spinneret. No phasmata observed.

Male

Somatic setae arranged as follows in the holotype : sub-dorsal, right side 7 16 28 40 51 64 78 89 100 = 9 (100 annules), left side 6 15 26 39 49 62 76 86 97 = 9 (97 annules) — sub-ventral, right side 21 32 76 83 = 4 (99 annules), left side 23 31 77 86 = 4 (98 annules). On the left body side the sub-ventral seta and the sub-dorsal seta on ring 86 are shifted to a sub-lateral position, and inserted on a common large peduncle.

Reproductive system with one testis. Spicules unequal in length and different in shape between right side and left side. The right spicule is longer than the left one (18 μm against 15 μm) and is a broad structure distally tapered to a pointed tip, proximally with a hardly offset capitulum; the left spicule is slender, with an offset capitulum. Gubernaculum not observed. Minute cloacal tube protruding between annules 83-84 with obviously swollen ventral body wall.

Female

Somatic setae arranged as follows : sub-dorsal, right side 6 14 25 35 43 54 66 78 86 = 9 (86 annules), left side 6 14 26 34 42 53 65 78 86 = 9 (86 annules) — sub-ventral, right side 25 69 = 2 (88 annules), left side 25 68 = 2 (88 annules).

Reproductive system didelphic-amphidelphic with outstretched branches. Vulva in annule 50 (left body side) i.e. at 56 % of total body length from anterior. No separate spermathecae observed. Large uterine sac opposite vulva with spermatozooids. No anal tube protruding from the ventral body wall.

TYPE LOCALITY : South-east of files Gloricuscs, lat. 11°44', long. 47°30', collected at — 3 700 m depth, on 4.IV.1977.

DIAGNOSIS : *Prototricoma inaequalis* sp. nov. is mainly characterized by its general habit ; by a homonomous annulation of the body cuticle, each annule with a transverse row of minute spines ; by the obviously long amphids ; by the unequal length and difference in shape between the sub-dorsal and sub-ventral cephalic setae and between the left and right spicules.

DIFFERENTIAL DIAGNOSIS : *P. inaequalis* sp. nov. differs from both other species of the genus : *P. longicauda* Timin, 1970, and *P. dherdei* Deeraemer, 1978, in general habit ; ornamentation of the body annules with minute tubes and lack of desmos ; in head-shape and very long amphids ; in number, shape and arrangement of the somatic setae ; the unequal length and difference in shape between the sub-dorsally and sub-ventrally inserted cephalic setae and between the right and left spicule.

***Prototricoma paralongicauda* sp. nov.**

(Fig. 7)

MATERIAL : 1 ♀ holotype (slide AN365).

MEASUREMENTS : *Holotype female* : L = 290, hd = 6.5 × 6.5, cs = 7-8.5, sd₅ = 10, sd₁₄ = 7, sd₂₂ = 7, sd₄₂ = 7.5, sd₅₈ = 7.5, sd₆₈ = 7.5, sd₇₈ = 9, sd₈₇ = 23, sv₁₇ = 6.5, sv₅₃ = 7, sv₇₀ = 5.5, oes = 17, t = 50, tnr = 17, mbd = 26, V = 53 %.

DESCRIPTION

Female

Body small, tapered towards both ends. Cuticle with 87 (counted dorsally) narrow homogeneous annules devoided of concretion. Each annule provided with a transverse row of hairy spines, minute on the anterior annules, becoming longer posteriorly (1 μm on anterior annules, 2-2.5 μm in vulva region, 5 μm in anal region).

Somatic setae arranged as follows : sub-dorsal, right side 5 15 30 44 54 66 77 85 = 8, left side 5 14 22 42 58 68 78 87 = 8 — sub-ventral, right side 18 55 75 = 3, left side 17 53 70 = 3. They are inserted on peduncles, slightly protruding above the annules. No differentiation in shape is observed between the sub-dorsal and sub-ventral setae. The somatic setae are short, except for the clearly elongated terminal pair ; the first pair of sub-dorsal setae and those on ring 78 are only slightly longer than the other setae.

Head small, as long as wide, from the peduncles of the cephalic setae onwards, anteriorly tapered towards a slightly widened, truncate end. Cuticle thin and naked. Cephalic setae inserted on short peduncles about halfway along the length of the head. They are short, unequal in length (on left body side) with the sub-ventrally inserted setae being longer than the sub-dorsally inserted one i.e. 8.5 μm against 7 μm. Amphids large, rounded thickwalled structures lying in posterior head region and on the first annule. Amphidial pore situated at posterior head border.

Digestive system typical desmoscoleoid. Oesophago-intestinal junction opposite annule 4. Intestine with large postrectal blindsae. Anal tube, large, obviously protrud-

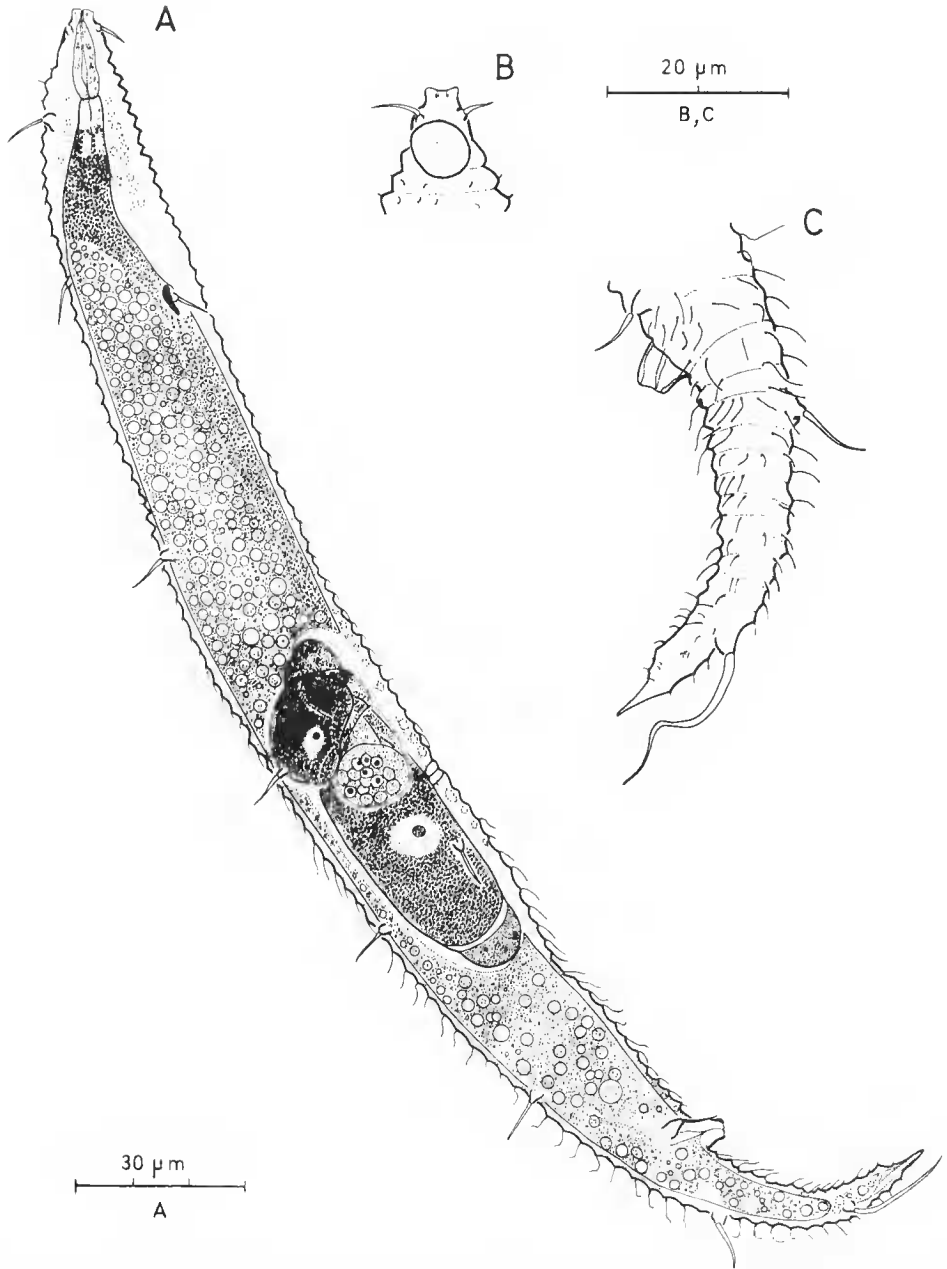


FIG. 7. — *Prototricoma paralongicauda* sp. nov. : A, ♀ holotype, entire specimen ; B, surface view of head (♀ holotype) ; C, surface view of tail (♀ holotype).

ing from the ventral body wall between annules 72-73. Ocelli yellowish, oblong pigment spots, opposite annules 16 to 18.

Reproductive system didelphic-amphidelphic with outstretched branches. Two spermathecae. Vulva situated between annules 47-48 i.e. at 53 % of the total body length from anterior.

Tail tapered posteriorly to a 17 μm long terminal part without annules, hut still bearing short hairy spines. Phasmata (1) only observed on the left body side.

Male : unknown.

TYPE LOCALITY : South-east of iles Glorieuses, lat. 11°44', long. 47°30', collected at — 3 700 m depth, on 4.IV.1977.

DIAGNOSIS : *Prototricoma paralongicauda* sp. nov. is characterized by its habit with naked homogeneously annulated body cuticle with short hairy spines, by the arrangement and number of the somatic setae with an elongated terminal pair of sub-dorsal setae, by the large anal tube and the tail shape.

DIFFERENTIAL DIAGNOSIS : *P. paralongicauda* sp. nov. (based on a single female specimen) closely resembles *P. longicauda* Timm, 1970 (described on a single male specimen), in head-shape and amphid-shape, structure of the somatic setae i.e. without differentiation, an annulated body cuticle bearing hairy spines, in body length i.e. 290 μm against 200 μm in *P. longicauda* and its closely related habitat : *P. paralongicauda* from deep-sea in north of Moçambique Channel and deep-sea from the Indian Ocean near the south of the Moçambique Channel for *P. longicauda*. *P. paralongicauda* sp. nov. differs, however, from *P. longicauda* in possessing much shorter hairy spines on its body cuticle without concretion between them, by the number and arrangement of the somatic setae, in having an elongated terminal pair of sub-dorsal setae and by its shorter and stouter tail shape compared with the long and fine tail in *P. longicauda*. Since until now, little is known on variability between specimens of the same and specimens of different sex within *Prototricoma*, I believe at present time the differences observed worth to consider the female specimen as belonging to a different species. It might be that, when more specimens become available, all the differences found, appear to be due to sexual differentiation.

CONCLUSIONS

The desmoscolecoid material from 11 samples from different localities situated in the surroundings of Iles Glorieuses, Banc du Geysier and Banc du Leven (North-east zone of the Moçambique Channel) appeared to be very rich in species. I observed 47 species of Desmoscolecinae : *Prototricoma* (2), *Desmoscolex* (45) and 30 species of Tricominae : *Tricomoma* (25), *Quadricoma* (2), *Quadricomoides* (1), *Antarcticonema* (1), *Desmogelachia* (1), *Paratricoma* (1) and *Desmotricoma* (1). Among them 12 species were new to science : *Prototricoma inaequalis*; *P. paralongicauda*, *Desmoscolex abyssorum*, *D. complexus*, *D. curvespiculatum*, *D. macramphis*, *D. spinirostris*, *Antarcticonema inaequalis*, *Tricomoma curvespi-*

culata, *T. bullapophysa*, *T. gloriosa* and *Desmotricoma spinicauda*, the latter belonging to a new genus *Desmotricoma*.

The material was poor in number of specimens, several species remain undescribed.

Among this mainly deep-sea material we observed on the one hand specimens similar or identical with specimens from lower depths, and on the other hand more peculiarities and new features occurred than ever found in sublittoral and eulittoral faunas.

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